ABSTRACT OF THE DISCLOSURE

An X-ray computed tomography apparatus according to this invention includes a gantry (1) which scans an imaging target region of a subject to be examined in accordance with scan conditions, a reconstruction unit (36) which reconstructs image data from projection data, a scan plan setting support system (40) which sets scan conditions, an image SD calculating unit (41) which calculates an image SD associated with an index of picture quality on the basis of the set scan conditions, a data storage device (35) which stores sample image data having a reference value of an image SD, a simulation image generating unit (42) which generates simulation image data corresponding to the calculated image SD from the sample image data on the basis of the calculated image SD and the reference value of the image SD, and a display (38) which displays the generated simulation image data.